Teleton

SERVICE MANUAL

Stereo Cassette Deck

MODELS C-500
C-500BS

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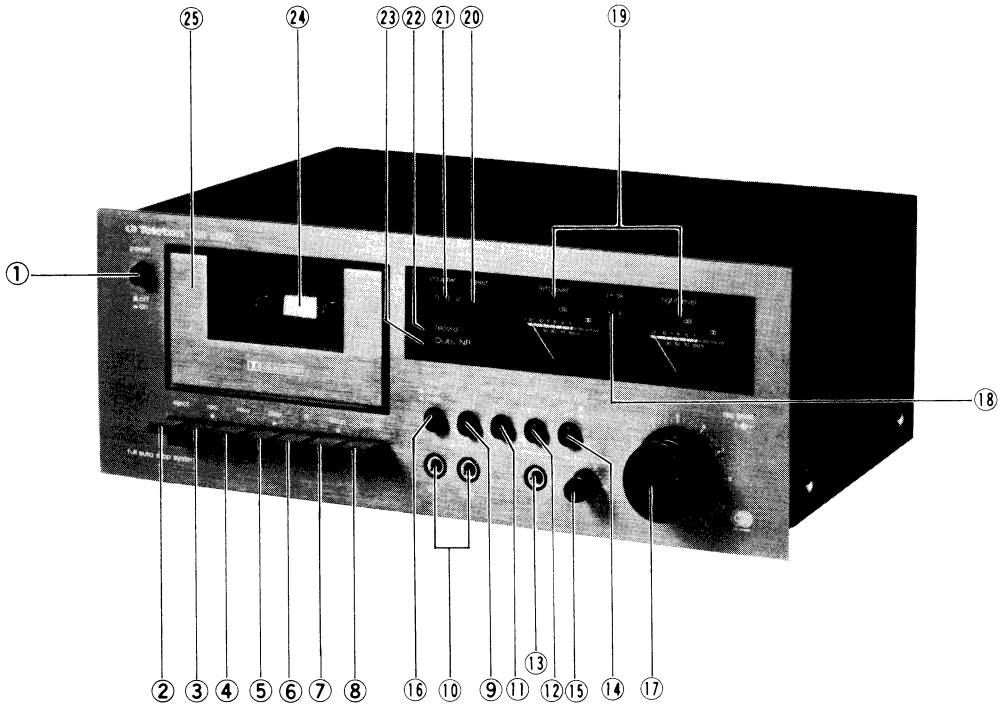
Specifications are subject to change without notice.

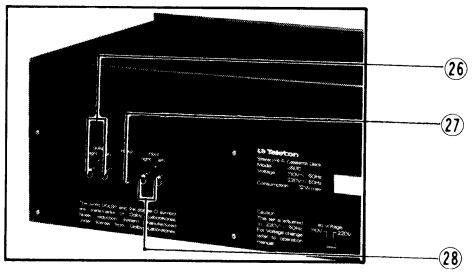
SPECIFICATIONS

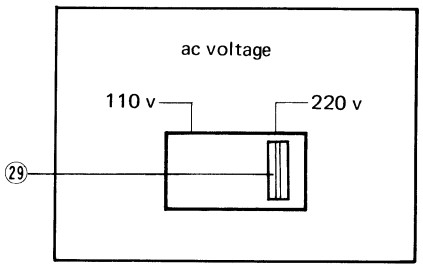
Type	C500, C500BS
Power Source	AC 240V, 50 Hz (UK) AC 110/220V, 50 Hz (Continent)
Power Consumption	AC 12W
Dimensions	420 (W) × 150 (H) × 250 (D) mm
Weight	6.5 kg
Cassette	C-30, C-60, C-90
Tape Speed	4.76 cm/sec
Fast Forward Time	Less than 90 sec (with C-60)
Rewind Time	Less than 90 sec (with C-60)
Recording Time	90 min. (with C-90)
Recording System	AC bias, 85 kHz
Erasing System	AC erasing
Terminals:	
LINE IN	50 mV (50 kΩ)
L-MIC-R, PB/REC (DIN)	0.7 mV (10 kΩ)
LINE OUT	580 mV (with Dolby tape MTT-150)
PHONES	2 mW (8Ω) (with Dolby tape MTT-150)
PB/REC (DIN)	580 mV (with Dolby tape MTT-150)

Wow and Flutter	Less than 0.095% WRMS
Signal-To-Noise Ratio	46 dB (Normal) (Dolby OFF) 46 dB (CrO_2) (Dolby OFF)
Dolby Effect	8 dB
Frequency Response	40 ~ 12,500 Hz (Normal) 40 ~ 14,000 Hz (CrO_2)
Distortion	2.8% (Normal) 3% (CrO_2)
Subfunctions:	
Tape Select Switch	CrO_2/FeCr/NORM
Dolby NR	DOLBY NR (ON/OFF)
Input Select	MIC (CIN)/LINE IN
Red LED Dolby NR Indicator	
Red LED Recording Indicator	
3-digit Tape Counter	
Semiconductors:	
Transistors	14
ICs	2
Diodes	8 + 1 stacked diode
LEDs	3

PARTS IDENTIFICATION





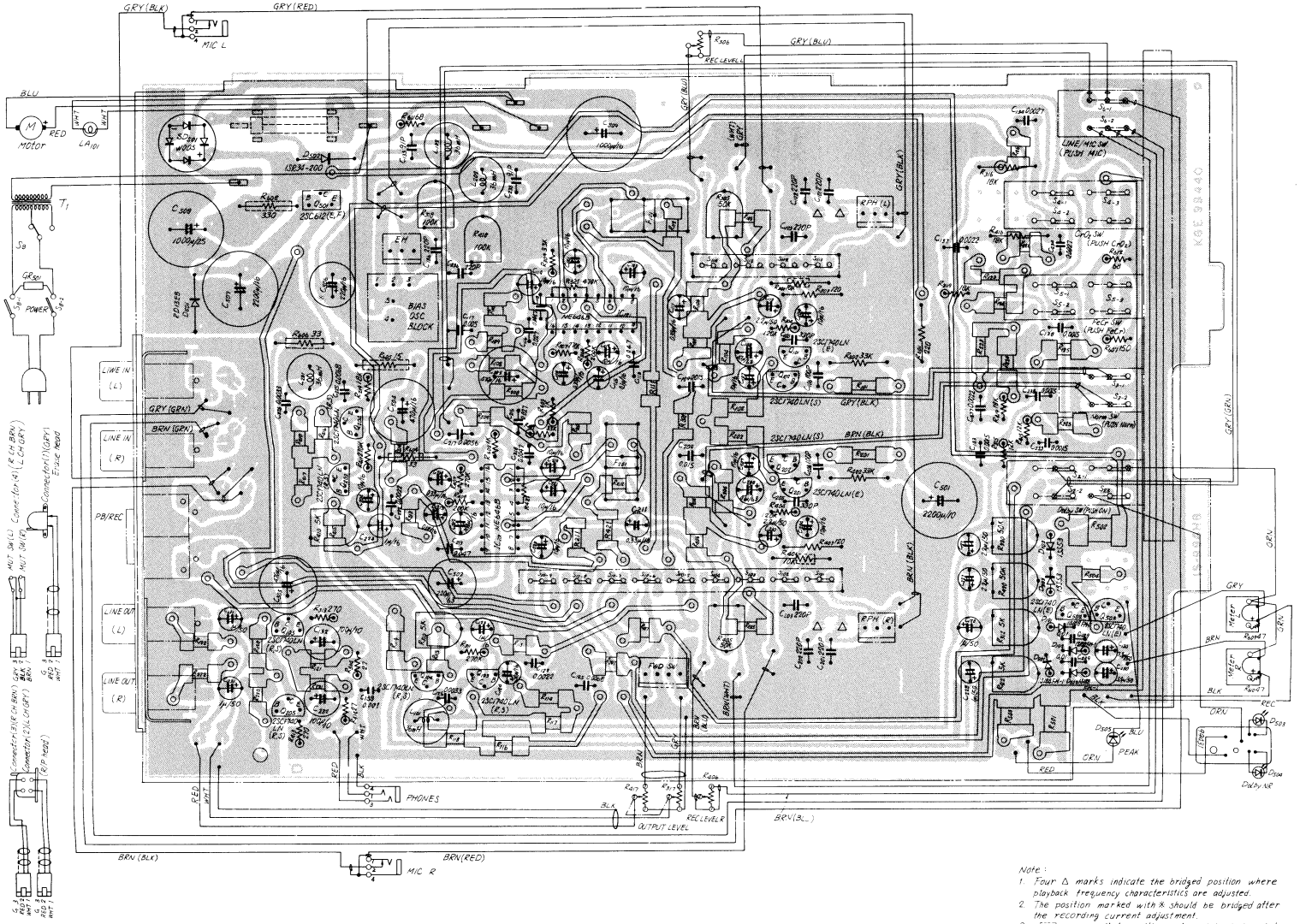


Model C500 only

1. Power Switch
2. Eject Lever
3. Record Lever
4. Rewind Lever
5. Play Lever
6. Fast Forward Lever
7. Stop Lever
8. Pause Lever
9. CrO_2 Tape Switch
10. Microphone Jacks
11. Ferri-Chrome Tape Switch
12. Normal Tape Switch
13. Headphone Jack
14. Dolby* Noise Reduction Switch
15. Output Level Control
16. Input Select Switch
17. Recording Level Control
18. Peak Level Indicator
19. VU Meters
20. Counter Reset Button
21. Tape Counter
22. Recording Indicator
23. Dolby Noise Reduction Indicator
24. Cassette Room Lamp
25. Cassette Door
26. LINE OUT Jacks
27. DIN Jack
28. LINE IN Jacks
29. AC Voltage Select Switch (Model C500 only)

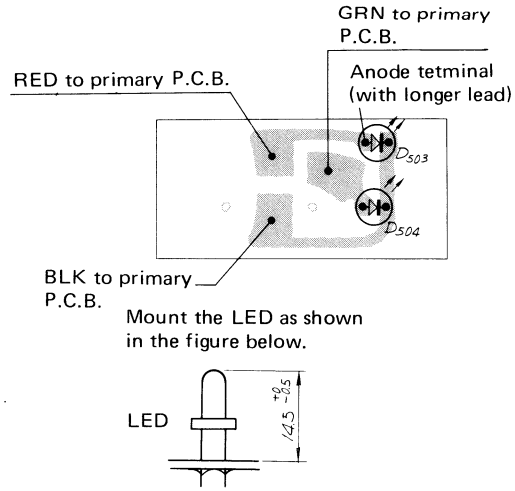
*Dolby is a trademark of Dolby Laboratories.

MOTHER P.C. BOARD

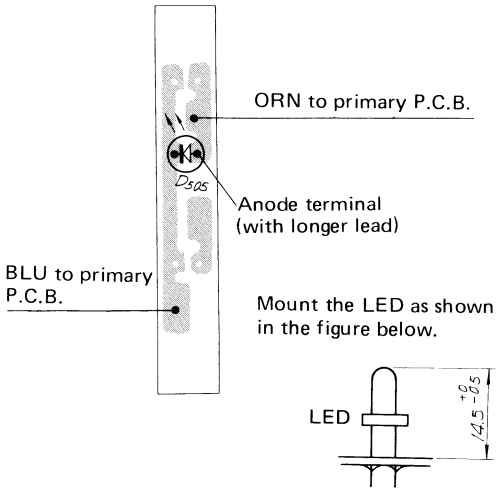


Note:
1. Four △ marks indicate the bridged position where playback frequency characteristics are adjusted.
2. The position marked with ※ should be bridged after the recording current adjustment.
3. ~~~~ means that a silicon glass tube is inserted within a resistor.

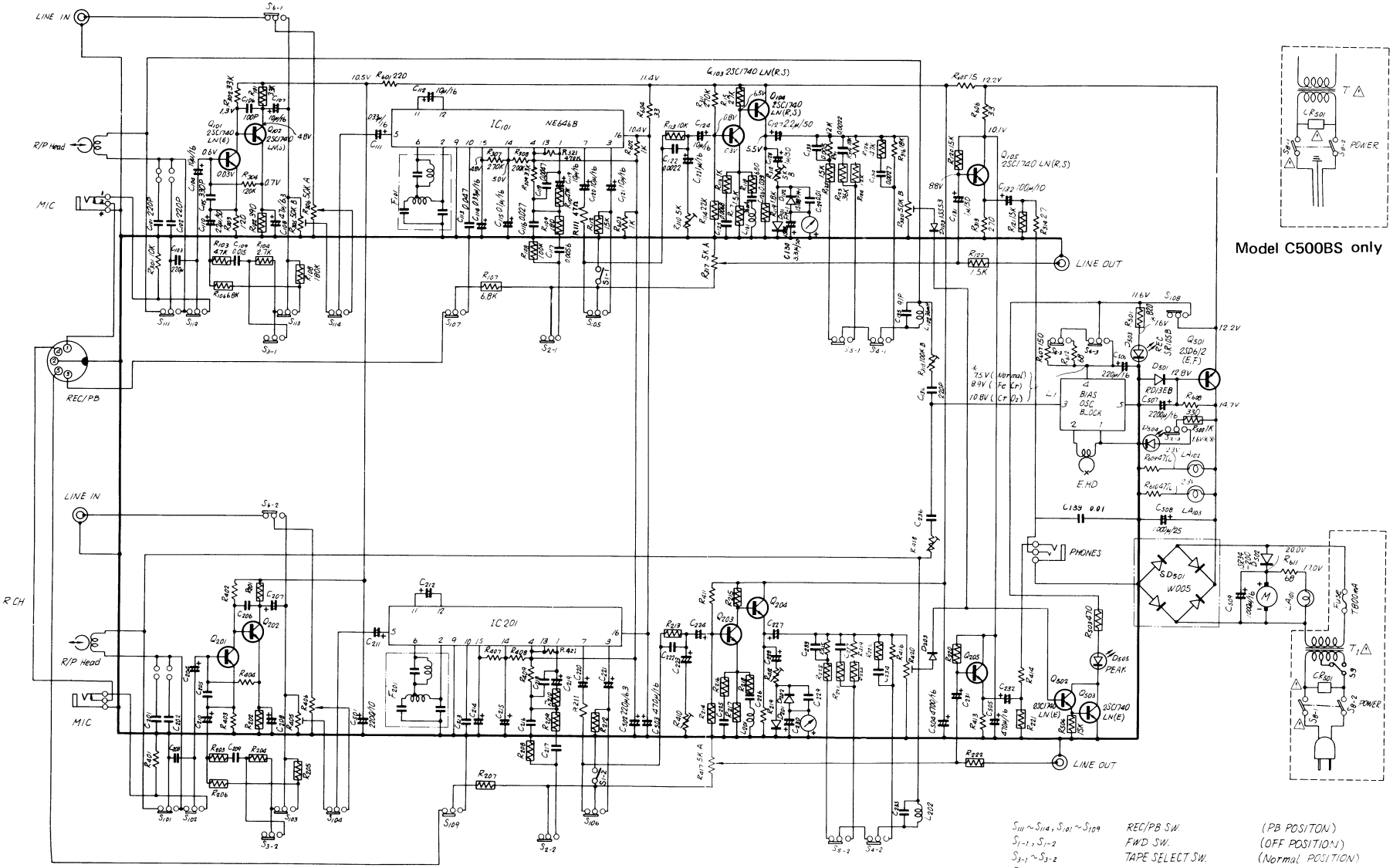
LED P.C. CIRCUIT BOARD (A)



LED P.C. CIRCUIT BOARD (B)



SCHEMATIC DIAGRAM



* : Voltage level when the REC/PB switch is set to REC. (At two points on the diagram)

** : Voltage level when the DOLBY swich is set to ON. (At one point on the diagram)
(Use a tester having no internal impedance.)

: Printed resistor

S_{111} ~ S_{114}, S_{101} ~ S_{109}	REC/PB SW.	(PB POSITON)
S_{1-1}, S_{1-2}	FWD SW.	(OFF POSITION)
S_{3-1} ~ S_{3-2}	TAPE SELECT SW.	(Normal POSITION)
S_{8-1}, S_{8-2}	POWER SW.	(OFF POSITON)
S_{2-1}, S_{2-3}	DOLBY SW.	(OFF POSITION)
S_9	VOLTAGE SELECTOR SW.	(110~120V POSITION)
S_{4-1} ~ S_{4-3}	TAPE SELECT SW.	CrO_2(Normal POSITION)
S_{5-1} ~ S_{5-3}	TAPE SELECT SW.	FeCr(")
S_{6-1}, S_{6-2}	LINE/MIC SW.	(LINE POSITION)

PARTS LIST

NOTE: Standard Parts as Resistors, Capacitors, etc., not listed here.

Ref. No.	Parts No.	Description
	CABINET AND CHASSIS	
102	KGE012822	Wire Clamp
141	KGC98447	Cover
142	KGE3135	Cushion, 10 × 30 × 6
144	KGE98674	Washer, 12ϕ × 5.2ϕ × 0.5t
145	KGE49353	Jack Plate Ass'y
146	KGE42470	Slide Switch
148	KGE42363	Connector 3P
149	KGE42498	Slide Switch
150	KGE42500	Multi Switch
151	KGE98473	Slide Plate
152	KGE013073	Mother Board Ass'y
153	KGE100447	Push Button (B)
154	KGE100480	Name Plate (UK only)
156	KGE99708	Nylon Rivet
157	KGE012733	Power Cord Ass'y (continent only)
157	KGE013070	Power cord Ass'y (UK only)
158	KGE44428	Power Cord (Continent only)
158	KGE44496	Power Cord (UK only)
159	KGE100612	Important Label (UK only)
160	KGE98767	Mounting Plate (continent only)
160	KGE100519	Mounting Plate (UK only)
161	KGE99864	Cord Bush (Continent only)
161	KGE100487	Cord Bush (UK only)
165	KGE47154	Power Transformer (Continent only)
165	KGE47140	Power Transformer (UK only)
167	KGD98521	Transformer Mounting Plate
168	KGE35033	Spark Killer
169	KGE98565	Cover
170	KGE42521	Power Switch
171	KGE100448	Push Button (A)
172	KGE99478	Mounting Plate
173	KGD99482	Chassis (Left)
175	KGC98465	Chassis (Centre)
176	KGC100454	Rear Panel (Continent only)
176	KGC100482	Rear Panel (UK only)
177	KGE46482	Diode (LED Red)
178	KGE99431	LED P.C. Board (B)
181	KGE42471	Mic Jack
182	KGE42472	Headphone Jack
183	KGE97423	LED P.C. Board (A)
184	KGE20644	Variable Resistor
185	KGE20643	Variable Resistor
186	KGC98450	Chassis (Right)
187	KGC99491	Chassis (Front)
188	KGE43158	Meter
189	KGC98441	Bottom Cover
190	KGE99282	Foot
191	KGE013063	Front Panel Ass'y
192	KGE100451	Knob
193	KGE100446	Knob (R)
194	KGE100452	Knob (L)
195	KGE99606	Cover
196	KGE49354	Binding Band
197	KGE42269	Slide Switch (Continent only)
198	KGE100523	Insulation Board (Continent only)
199	KGE100609	Cover
201	KGE13599	Screw, M2.5 × 5
211	19030	Screw with Spring Washer, M2.6 × 4
213	19026	Screw with Spring Washer, M2.6 × 5
218	22138	Flat Washer, 2.3ϕ × 6ϕ × 0.4t
221	KGE13600	Screw, M2.5 × 8
222	19077	Screw with Spring Washer, M2 × 6
223	19014	Screw with Spring Washer, M2.6 × 6
229	13052	Tapping Screw, M2.6 × 6
232	KGE98861	Screw, M2.5 × 4
233	KGE98043	Binding screw, M3 × 5 (BLK)
234	19063	Screw with Spring Washer, M4 × 10
235	18092	Nut, M4
236	19015	Screw with Knurled Flange, M3 × 5
239	KGE98288	Square Washer
240	19045	Screw with Spring Washer M2.6 × 6
241	18057	Nut, M2
243	19113	Screw with Spring Washer, M2 × 5
244	KGE98081	Screw, M2.5 × 6
246	14706	Screw, M5 × 8 (BKL)
248	KGE99115	Screw, M3.5 × 5 (BLK)
249	KGE98861	Screw, M2.5 × 4
	MECHANISM	
1	KGE011264	Plate Ass'y
2	KGE012431	Lever Ass'y
3	KGE97774	Roller
4	KGE97738	Flywheel Bracket
5	KGE012822	Wire Clamp
6	KGE14112	Thrust Adjusting Screw
7	KGE010656	Flywheel Ass'y
8	KGE99135	Flat Belt
14	KGE98836	Twist Coil spring
15	KGE98833	Lock Plate
16	KGE97797	Link
17	KGE010775	Stop Arm Ass'y
18	KGE010783	Function Plate Ass'y
19	KGE13446	Tension Coil Spring
20	KGE010774	Button Lock Plate Pressure Ass'y
28	KGE010749	Tension Arm Ass'y
29	KGE010748	Pause Lever Ass'y
30	KGE9992	Tension Coil Spring
31	KGE97868	Tension Coil Spring
32	KGE97860	Square Belt
33	KGD010755	Auto Shut-Off Mechanism Ass'y
34	KGE96716	Washer
35	KGE14343	Thrust Plate Spring
36	KGE99050	Spring
37	KGE99471	Rec. Lever
38	KGE99052	Tension Coil Spring
39	KGE011221	Tension Coil Spring Ass'y
40	KGE97735	FF Plate
41	KGE97733	Play Plate
42	KGE97734	Rew. Plate
43	KGD97736	Rec. Plate
44	KGE011220	Tension Coil Spring Ass'y
45	KGE011627	Idler Ass'y
46	KGE7484	Nylon Washer
47	KGE13754	Idler Spring
48	KGE97938	Idler Spring B
49	KGE99734	Switch Mounting Plate
50	KGE42561	Slide Switch
51	KGE14760	Tension Coil Spring
52	KGE011890	Lock Plate Ass'y
53	KGE97740	Motor Mounting Plate
54	KGE97731	Motor Pulley
55	KGE47022	Motor G2NL0
61	KGE95134	Brake Plate
62	KGE99457	Cassette Holder Spring

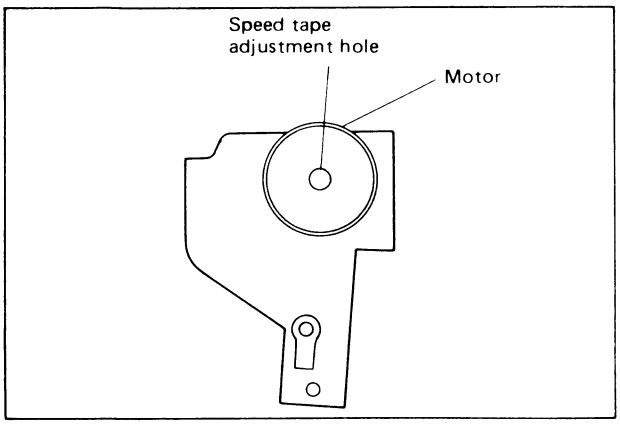
Ref. No.	Parts No.	Description
63	KGE49347	Lamp
64	KGE95644	Lamp Holder (A)
65	KGC010747	Mechanism Base Plate Ass'y
66	KGE97826	Pause Spring
67	KGE55072	Collar
68	KGD99452	Stay (Right)
69	KGE012487	Counter Mounting Plate Ass'y
70	KGE95378	Counter Pulley
71	KGE99287	Counter
72	KGE99459	Mounting Plate
73	KGE011222	Tension Coil Spring
74	KGE97939	Stop Spring
75	KGE010717	Capstan Base Ass'y
76	KGE010779	Pinch Roller Arm Ass'y
77	KGE98406	Collar
78	KGE47138	Record Head
79	KGE96998	Wire Clamp
80	KGE98357	Nut
81	KGE010767	Head Lever Ass'y
82	KGE97741	Nylong Washer
83	KGE3111	Nylong Washer, 1.6ϕ × 4ϕ × 0.2t
84	KGE14426	Detect Cam
85	KGE97727	Head Base Plate Clamp
86	KGE97712	Tension Coil spring
87	KGE98432	Cassette Rest
88	KGE99470	Tension Coil Spring
89	KGE99456	Rec. Prevention Plate
90	KGE97710	Brake Arm
91	KGE98054	Back Tension Spring
92	KGE97732	Felt, 1.5ϕ × 5ϕ × 1t
93	KGE97189	Compression Coil Spring
94	KGE011614	Reel Plate Ass'y
95	KGE98310	Nylon Washer, 1.3ϕ × 3.3ϕ × 0.5t
96	KGE98846	Lever C
97	KGE97715	Tension Coil Spring
98	KGD010772	Head Base Ass'y
99	KGE47143	Erase Head
100	KGE97726	Twist Coil Spring
101	KGE3354	Compression Coil Spring
102	KGE012822	Wire Clamp
103	KGE97804	Button Shaft Bearing A
105	KGE97932	Tension Coil Spring
106	KGD97799	Button Lever
107	KGC99448	Cassette Holder
108	KGE012430	Stay Ass'y (Left)
109	KGE98469	Guide Plate
110	KGD99453	Switch Lever
111	KGE99455	Lock Lever
112	KGE99468	Tension Coil Spring
113	KGE99469	Tension Coil Spring
114	KGE99454	Eject Cam
115	KGD99487	Eject Button
116	KGE99474	Spring
117	KGE97800	Button Stopper
122	KGE99828	Tension Coil Spring
123	KGE97802	Button Shaft Bearing C
124	KGE013061	Cassette Door Ass'y
125	KGE99464	Button Shaft
126	KGE99458	Cassette Spring
128	KGD99486	Button (C)
129	KGD012317	Cassette Room Ass'y
131	KGE14605	Counter Belt 69.5ϕ
201	KGE13599	Screw, M2.5 × 5
202	22140	E Ring, E-3
203	22135	E Ring, E-2

Ref. No.	Parts No.	Description
204	19014	Screw with Spring Washer, M2.6 × 6
205	14252	Screw, M2.6 × 8
206	22177	E Ring, E-3
207	22136	E Ring, E-2.5
208	22030	Flat Washer, 3.3ϕ × 8ϕ × 0.5t
209	22146	Flat Washer, 3ϕ × 1t
210	22134	E Ring, E-1.5
211	19030	Screw with Spring Washer, M2.6 × 4
212	19086	Screw with Spring Washer, M2 × 8
213	19026	Screw with Spring Washer, M2.6 × 5
215	19016	Screw with Spring Washer, M3 × 6
216	22147	E Ring, E-4
217	19034	Screw with Spring Washer M2 × 4
218	22138	Flat Washer, 2.2ϕ × 6ϕ × 0.4t
219	17019	Screw, M2 × 3
220	22137	Flat WWasher, 2.9ϕ × 7.5ϕ × 0.5t
221	KGE13600	Screw, M2.5 × 8
222	19077	Screw with Spring Washer, M2 × 6
223	19014	Screw with Spring Washer, M2.6 × 6
224	54004	Steel Ball
225	54012	Steel Ball
226	14536	Screw, M2.6 × 3
227	KGE99715	Screw with Knurled Flange, M2.6 × 8
228	19019	Screw with Knurled Flange, M2.6 × 6
229	13052	Tapping Screw, M2.6 × 6
230	KGE97887	Tapping screw, M2 × 4
231	KGE99115	Screw, M2.5 × 5
247	22154	Flat Washer, 3.3ϕ × 6ϕ × 0.5t
Q101,201, 502,503	KGE46494	Transistor, 2SC1740 LN (E)
Q102,202	KGE46493	Transistor, 2SC1740 (S)
Q103～105, 203～205	KGE46496	Transistor, 2SC1740 LN (R, S)
Q501	KGE46385	Transistor, 2SD612 (E, F)
IC101,201	KGE46489	IC, NE646B
D101,102, 201,202	KGE41959	Diode, 1S188 FM-1
D103,203	KGE46465	Diode, 1SS53
D501	KGE46303	Zener Diode, RD13EB
D502	KGE46485	Diode, 1SR34-200
D503～505	KGE46482	Diode (LED, Red)
SD501	KGE46487	Rectifier, W005
L1	KGE47023	Bias OSC Block
L101,102, 201,202	KGE49868	Micro Inductor, 36 mH
F101,201	KGE47136	Filter Block
	KGE49051	Fuse, T800 mA
S101～109	KGE42470	Slide Switch (Rec/Play)
S111～114	KGE42498	Slide Switch (Rec/Play)
	KGE42561	Slide Switch (2 pole 2 contact)
S8-1,8-2	KGE42521	Power Switch
S9	KGE42269	Slide Switch (Voltage Select)
R305,320, 405,420	KGE20655	Semi-Fixed Variable Resistor, 50kΩ
R310,312, 410,412	KGE20651	Semi-fixed Variable Resistor, 5kΩ
R318,418	KGE20656	Semi-Fixed Variable Resistor, 100kΩ
R306,406	KGE20643	Variable Resistor, 50kΩ A
R317,417	KGE20644	Variable Resistor, 50kΩ A
	KGE013060	Amp. Ass'y
	KGE95715	Printed Terminal
	KGE14536	Fuse Holder
	KGE99724	Shield Plate
183	KGE97423	LED P.C. Board (A)
178	KGE99431	LED P.C. Board (B)

ALIGNMENT PROCEDURE

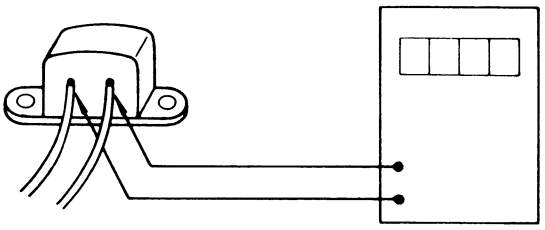
1. TAPE SPEED

Turn power switch ON and allow motor to idle for 20 seconds insert 3 kHz Test Tape.
Select play position. Connect frequency meter to output and adjust motor speed to obtain reading of 3,000 Hz ± 45 Hz. For method of adjustment see diagram.



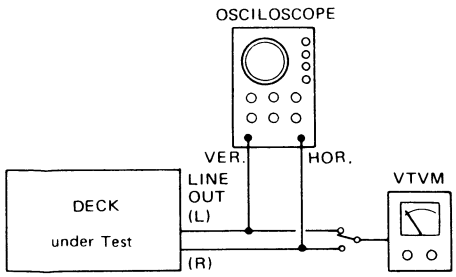
2. BIAS OSCILLATOR FREQUENCY

Connect a frequency counter to the terminals of the erase head and adjust the oscillator block (L1) to an oscillating frequency of 85 kHz ± 5 kHz.

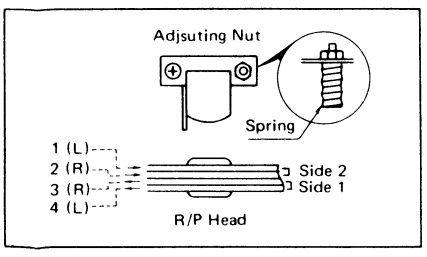


3. HEAD AZIMUTH

Play back the test tape (MTT-114) and adjust for maximum output.



Head Phase Check Setup



Head Azimuth Adjustments Location

4. PLAY BACK LEVEL

Play back the test tape (MTT-150) and adjust R305 (left channel) and R405 (right channel) until an output of −2.5 dBs is obtained from the LINE OUT terminals.

5. PLAYBACK EQUALIZER

Set the TAPE SELECTOR switch to CrO_2 (DOLBY NR switch OFF), play the test tape (MTT-316) and adjust the parts marked with △ in the mounting diagram C101, C102 (left channel), C201, C202 (right channel) until the frequency response from the LINE OUT terminals is of the same level at 2 kHz and 10 kHz.

6. RECORDING CURRENT

Load the MTT-502 tape. Set the TAPE SELECTOR switch to NORM and apply an input of −20 dB, 400 Hz to the LINE IN terminals. In the record mode adjust the RECORD LEVEL control until the output of −2.5 dBs is obtained from the LINE OUT terminals. Play the tape back and adjust R310 (left channel) and R410 (right channel) until the output of the LINE OUT terminals is −2.5 dBs (at this time OUTPUT LEVEL control is at maximum and the semi-fixed resistor for bias current adjustment should be at the mechanical mid-position.)

7. BIAS CURRENT

Load the MTT-502 tape. Set the TAPE SELECTOR switch to NORM and the DOLBY NR switch to ON. Apply an input of −20 dB to the LINE IN terminals and adjust the RECORD LEVEL control until the output of −2.5 dBs is obtained from the LINE OUT terminals at 400 Hz. Then, apply an input of −45 dBs (400 Hz) to the LINE IN terminals and record. Play the tape back and adjust R318 (left channel) and R418 (right channel) until the playback outputs of the LINE OUT terminals of 1 kHz and 10 kHz are of the same level (at this time, the OUTPUT LEVEL control is at maximum).

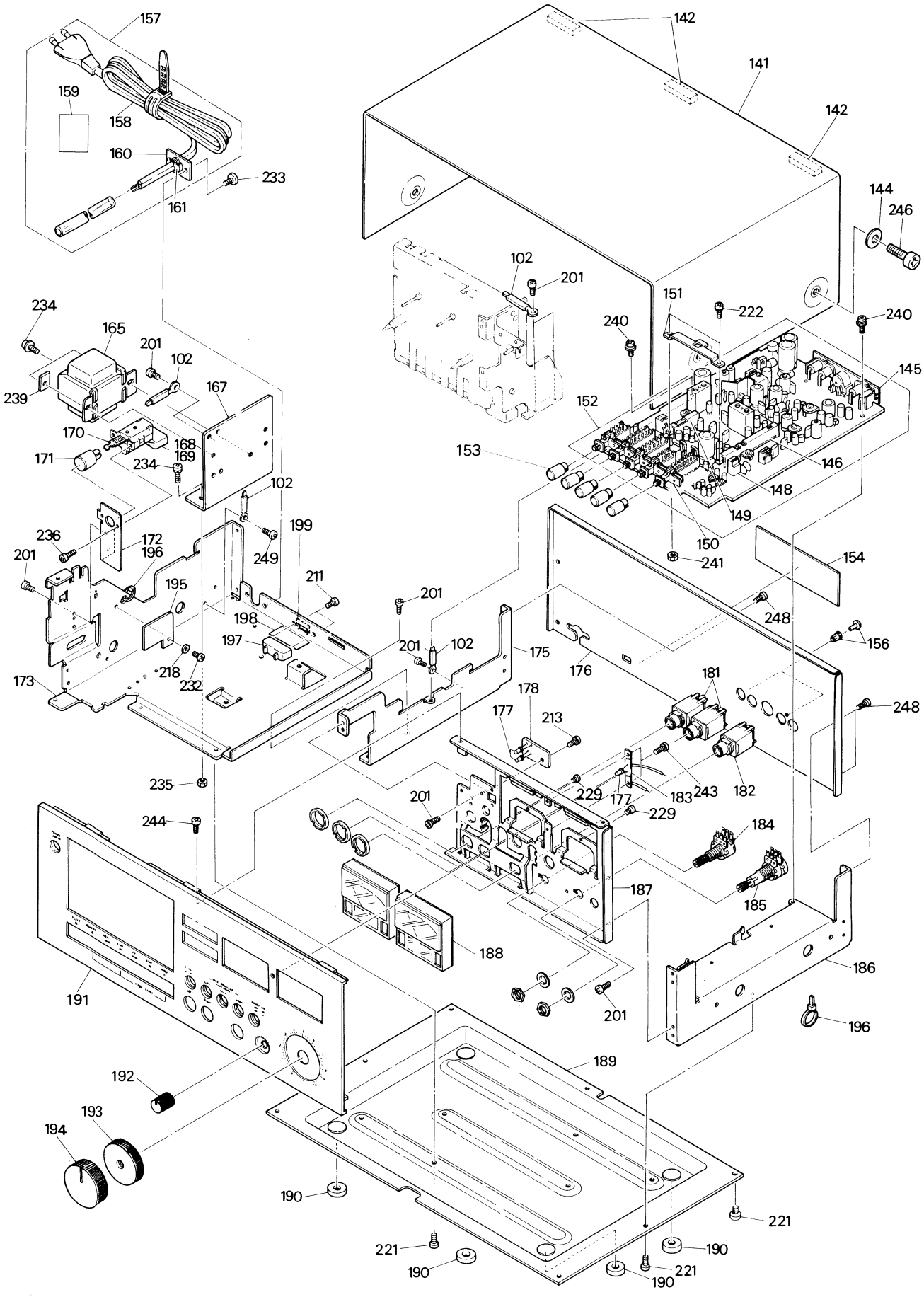
8. VU METERS

Play back the tape MTT-150 and adjust R312 (left channel) and R412 (right channel) until the level meter deflects to +3 VU (the point marked with ◘◘).

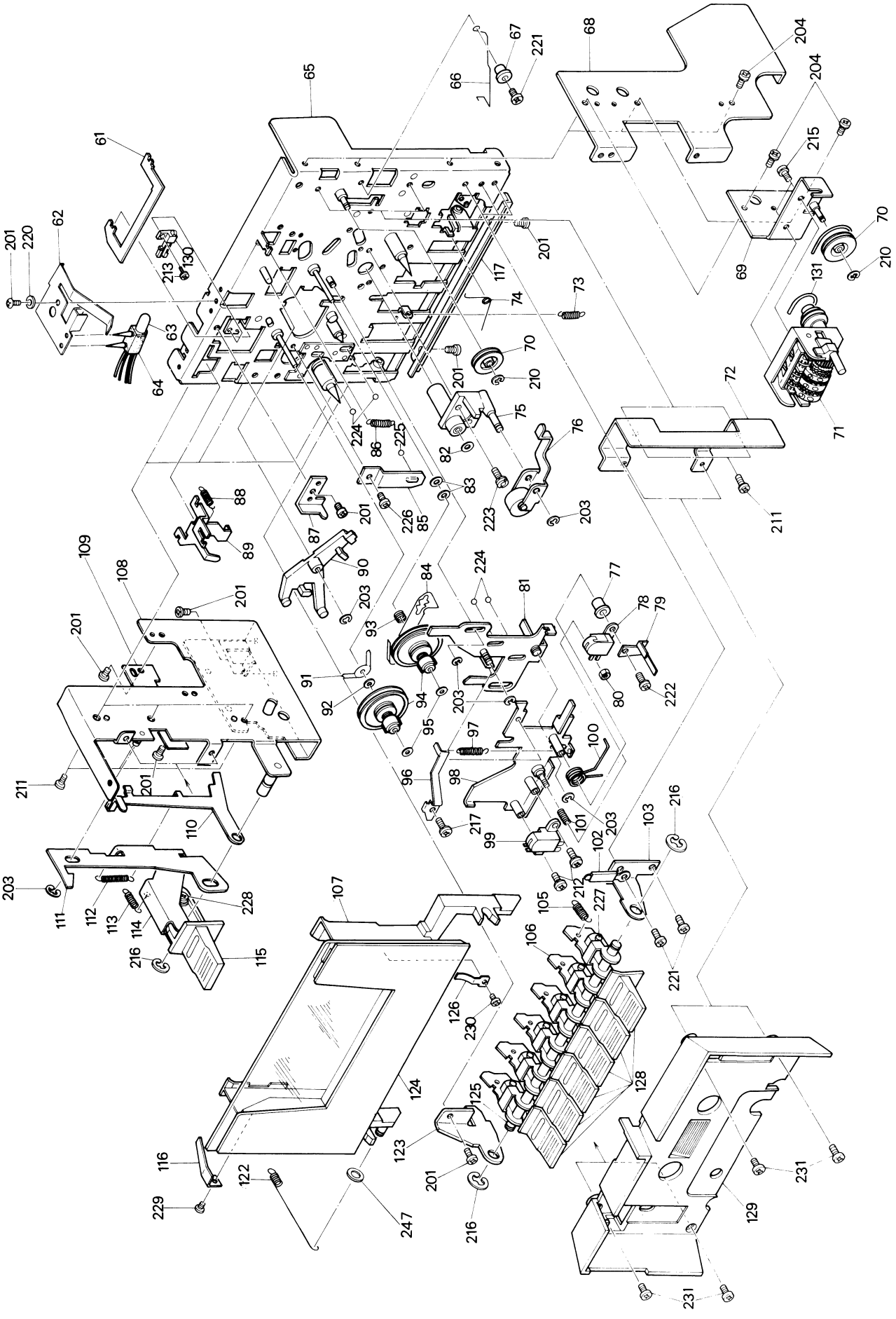
9. PEAK LEVEL INDICATOR

Apply an input of −20 dBs (400 Hz) to the LINE IN terminals and set the OUTPUT LEVEL control to maximum. Adjust the REC LEVEL control R306 until the output of −2.5 dBs is obtained from the LINE OUT terminals (at this time the REC LEVEL control R406 is at minimum). Then adjust R320 so that the LED extinguishes at the input of −20 dBs. In the same procedure described above adjust R406 (at this time R306 is at minimum). Then adjust R420 so that the LED extinguishes when the output is −21 dBs.

EXPLODED VIEWS



EXPLODED VIEWS



EXPLODED VIEWS